RUHANI COLLEGE
OF HEALTH BUSINESS AND TECHNOLOGY

RUHANI COLLEGE OF MASSAGE THERAPY
Registered Massage Therapy Diploma Program
RU RMT 25 · Hydrotherapy · 70 Hours · 10 Days

Lecture 9 — Contrast Therapy: Principles, Foot and Hand Baths, and Contrast Towels

Student Handout

Alternating heat and cold to drive a vascular pump — the principle, the two-basin method, and the towel method.

How to use this handout

This handout carries the full content of the lecture in continuous form so that you can follow the session without transcribing slides, and revise from it afterwards. Work through it alongside the deck, annotate it freely, and use the review questions at the end to test recall before the written and practical examinations. Section 8 lists the prescribed and recommended reading, together with the regulatory sources cited throughout.

All clinical parameters in this handout are the ones you will be assessed on. All professional requirements are drawn from the CMTO Standards of Practice (2022) and the Ontario legislation listed in the references.

1. Learning outcomes

By the end of this lecture you will be able to:

- Explain the vascular pump mechanism of contrast therapy.
- State the standard hot-to-cold ratio, sequence, phase durations and number of cycles.
- Identify the indications and contraindications, including why both heat and cold contraindications apply.
- Set up and perform a two-basin contrast bath for a hand or foot at correct temperatures.
- Perform a smooth contrast-towel sequence for the back, neck, shoulders and trunk.
- Structure a contrast treatment from screening through to documentation.
- Teach contrast bathing as a home-care technique with explicit stop criteria.

2. Overview

Contrast therapy alternates heat and cold to produce repeated cycles of vasodilation and vasoconstriction, mobilising blood and interstitial fluid through the treated region. The therapeutic value lies in the alternation itself; neither temperature alone produces the pumping action, and a slow, hesitant sequence produces very little of it.

The standard protocol is simple and worth committing to memory: begin hot, end cold; hot phase three to four minutes, cold phase thirty to sixty seconds, an approximate 3:1 ratio, three to four complete cycles. For immersion, the hot basin sits at 38–43 °C and the cold at 10–16 °C, both measured with a thermometer and maintained across the sequence.

One screening rule matters more than any other here. Students often assume that alternating temperatures is gentler and therefore safer. From a screening perspective the opposite is true: contrast therapy carries the contraindications of both heat and cold, not the average of them. A client with Raynaud's phenomenon cannot have contrast therapy however mild the hot phase; a client with a DVT cannot have it however brief the cold phase. Contrast is also a subacute modality — never acute — so re-stage the presentation at every visit.

3. Key terms

- **Vascular pump —** the flushing effect produced by repeated cycles of vasodilation and vasoconstriction; sometimes called vascular gymnastics.
- **3:1 ratio —** the standard proportion of hot to cold time — three to four minutes hot to thirty to sixty seconds cold.
- **Begin hot, end cold —** the fixed sequence rule; ending cold leaves reactive vasodilation building and produces a tonifying finish.
- **Cycle —** one complete hot phase followed by one cold phase; three to four cycles constitute a standard treatment.
- **Two-basin method —** immersion contrast for a hand or foot, giving complete and even coverage plus hydrostatic pressure.
- **Contrast towels —** alternating hot and cold towels for regions that cannot be immersed — back, neck, shoulders, trunk.
- **Subacute presentation —** the stage at which contrast is indicated: swelling settling, pain on movement rather than at rest.
- **Combined screening —** clearing the client separately against the heat contraindications and against the cold contraindications.

4. Lecture content

Alternating heat and cold pumps local circulation.

Heat dilates, cold constricts; repeating the cycle produces a flushing effect sometimes described as vascular gymnastics, mobilising blood and interstitial fluid through the area. The therapeutic value lies in the alternation itself — neither temperature alone produces the pumping action, and a slow, hesitant sequence produces very little of it.

What is actually happening during a contrast sequence

- The hot phase produces vasodilation, increased flow and increased capillary filtration in the treated region.
- The cold phase produces vasoconstriction, reduced flow and reduced filtration, while the reactive response begins to build.
- Switching back to heat catches the tissue during reactive vasodilation, amplifying the flow response.
- Repeating the cycle produces successive waves of dilation and constriction rather than a single sustained change.
- The alternation also provides strong, varied sensory input, which contributes to pain modulation.
- Because the phases are brief, the net thermal load on the client is much lower than a sustained application of either temperature.
- That lower load is why contrast can often be used where prolonged heat alone would be too demanding — provided both sets of contraindications are cleared.
- The measurable effect is chiefly superficial; be honest with clients about depth.

Standard contrast parameters

Ratios vary by source and by goal; this is a safe, widely used general protocol and the one you will be assessed on.

Parameter	Standard
Sequence	Begin with hot, end with cold

Parameter	Standard
Hot phase	Approximately 3 – 4 minutes
Cold phase	Approximately 30 – 60 seconds
Hot-to-cold ratio	Approximately 3 : 1
Cycles	3 – 4 complete alternations
Finish	End on cold for a tonifying effect
Immersion temperatures	Hot basin 38 – 43 °C; cold basin 10 – 16 °C
Total treatment time	Approximately 15 – 20 minutes

Why hot first and cold last

Begin hot

- Starting warm is more comfortable and allows the client to acclimatise.
- Vasodilation is established first, so the cold phase produces a genuine contrast rather than cooling already-cold tissue.
- The first hot phase can be slightly longer to establish the response.
- Beginning cold on an unprepared limb is uncomfortable and reduces compliance.

End cold

- Ending on cold leaves the tissue with reactive vasodilation building after the treatment.
- The result is tonifying: the client leaves feeling warm and alert rather than heavy and flushed.
- It also reduces the risk of post-treatment oedema in a dependent limb.
- If the goal is sedation rather than tonification, contrast is the wrong modality — use sustained warmth instead.

Indications and contraindications

Indications

- Subacute injury, after the acute inflammatory stage has settled
- Sluggish local circulation in an extremity
- Subacute oedema and joint stiffness
- Promoting recovery and tissue flushing
- Post-exercise recovery in an otherwise healthy client
- Chronic stiffness where sustained heat alone has not helped

Contraindications

- Acute injury, inflammation or active bleeding
- Impaired sensation or significant circulatory disease
- Cold hypersensitivity, cold urticaria or Raynaud's phenomenon
- DVT or suspected clot; peripheral vascular disease
- Open wounds or infection on the part
- Combine the contraindications of both heat and cold — if either excludes the client, contrast is excluded

Contrast therapy carries the contraindications of both heat and cold, not the average of them.

Students often assume that alternating temperatures is gentler and therefore safer. The opposite is true from a screening perspective: you must clear the client for heat and clear them separately for cold. A client with Raynaud's phenomenon cannot have contrast therapy, however mild the hot phase. A client with a DVT cannot have contrast therapy, however brief the cold phase.

Why contrast is a subacute modality

Stage	Presentation	Modality	Reason
Acute	Heat, redness, swelling, pain at rest, first 48–72 hours	Cold alone	The hot phase would increase bleeding, exudate and pain
Subacute	Swelling settling, pain on movement rather than at rest	Contrast	The pump mobilises residual fluid without provoking fresh inflammation
Chronic	Stiffness and restriction without inflammatory signs	Heat, or contrast if circulation is sluggish	Heat prepares tissue; contrast helps where flow is poor
Acute-on-chronic	A chronic condition with a fresh inflammatory flare	Cold alone	Treat as acute until the flare settles

Structuring a contrast treatment

1. **Screen and consent.** Confirm the subacute stage; rule out both heat and cold contraindications; test sensation; obtain consent.
2. **Prepare both temperatures.** Ready a hot source or basin and a cold source or basin at verified, safe temperatures before you begin.
3. **Begin hot.** Apply heat for about three to four minutes.
4. **Switch to cold.** Apply cold for about thirty to sixty seconds.
5. **Repeat three to four cycles.** Alternate hot and cold, maintaining the approximate 3 : 1 ratio and moving promptly between phases.
6. **End on cold.** Finish with the cold phase, dry the area thoroughly, and reassess before proceeding.

Rules for alternating temperatures

- Keep both temperatures within safe ranges — neither scalding nor painfully cold.
- Because both heat and cold are used, screen for the contraindications of each separately.
- Verify both temperatures with a thermometer before starting, and re-check during the sequence as they drift.
- Make transitions promptly so the contrast effect is preserved; a slow changeover dissipates the response.
- Monitor skin colour and the client's comfort continuously throughout.
- Stop for marked pallor, increasing pain, numbness beyond the cold phase, or any adverse reaction.
- Never leave the client to manage the alternation unsupervised in the clinic.
- Dry the part thoroughly between and after phases where practical, particularly between digits.

Immersion contrast for the extremities

Two basins — one hot, one cold — let an entire hand or foot be immersed for an even contrast effect.

- Full immersion surrounds the extremity, giving uniform heating and cooling that no surface application can match.
- Excellent for subacute swelling and stiffness of the hands, wrists, feet and ankles.
- Simple, inexpensive and easy to reproduce as a home treatment — two bowls and a tap.
- Follows the same begin-hot, end-cold contrast rules as every other contrast method.
- Hydrostatic pressure of the water adds a mechanical component to the vascular effect.
- Parameters: hot basin approximately 38–43 °C (100–110 °F); cold basin approximately 10–16 °C (50–60 °F).
- Hot phase three to four minutes; cold phase thirty to sixty seconds; three to four cycles.

Indications and contraindications

Indications

- Subacute sprains and strains of the hand or foot
- Subacute swelling and joint stiffness
- Sluggish circulation in the extremity
- Recovery support after the acute stage has settled
- Chronic stiffness of the hands or feet where heat alone has not helped

Contraindications

- Acute injury, inflammation or active bleeding
- Peripheral vascular disease and DVT; diabetes requires caution and often exclusion
- Cold hypersensitivity or Raynaud's phenomenon
- Impaired sensation, or open wounds on the part
- Fungal or transmissible skin conditions, for shared-basin hygiene
- Any client who cannot report discomfort reliably

Performing the contrast bath

1. **Screen and consent.** Confirm the subacute stage; test sensation; rule out heat and cold contraindications; inspect the part; obtain consent.
2. **Prepare basins.** Fill one with hot water at 38–43 °C and one with cold at 10–16 °C; verify both with a thermometer and position them side by side.
3. **Begin hot.** Immerse the part fully in the hot basin for about three to four minutes.
4. **Switch to cold.** Move directly to the cold basin for about thirty to sixty seconds.
5. **Cycle three to four times.** Alternate, maintaining the approximate 3 : 1 ratio and topping up the hot basin as it cools.
6. **End cold and dry.** Finish in the cold basin, dry thoroughly including between the digits, and reassess.

Practical arrangement

The basins

- Both basins deep enough to cover the part to above the joint being treated.
- Positioned side by side at a height the client can reach without straining.
- Towels between and around them to catch splash and manage the floor.

- A jug of hot water and a supply of ice to maintain both temperatures through the sequence.
- A thermometer available throughout, not just at the start.

The client

- Seated with the back supported and the limb comfortably positioned.
- Clothing protected and sleeves or trousers rolled well clear.
- Able to move the part between basins without twisting or overreaching.
- Kept warm around the rest of the body throughout.
- For a foot bath, a non-slip mat and assistance in and out.

Practical guidance and hygiene

Safety

- Keep both temperatures within safe, comfortable limits and re-check during the session.
- Dry thoroughly between the fingers or toes to protect the skin.
- Stop for numbness persisting beyond the cold phase, marked pallor or increasing pain.
- Watch the client's colour and demeanour, not only the treated part.
- Assist the client when rising, particularly after a foot bath.

Hygiene

- Disinfect both basins between clients.
- Use fresh water for every client; never reuse either basin's water.
- Do not immerse a part with broken skin or an active infection in a shared basin.
- Fresh towels for every client; manage wet floors as a slip hazard.
- Record cleaning in the equipment service log.

Contrast for regions that cannot be immersed

Towels carry the contrast effect to the back, neck, shoulders and trunk, conforming to any contour.

- Hot and cold towels are applied in alternation to areas a basin cannot reach.
- Moist towels mould to the region and transfer temperature efficiently.
- Delivers the same vascular-pump benefit as immersion contrast.
- Demands organisation: towels must be ready, wrung and exchanged promptly or the rhythm is lost.
- The therapist retains continuous control of the dose, which makes this the safer option where tolerance is uncertain.
- Parameters: hot towel three to four minutes, cold towel thirty to sixty seconds; three to four cycles; begin hot, end cold.
- Wring every towel thoroughly and test each hot towel on your own forearm first.

Indications and contraindications

Indications

- Subacute tension and stiffness of the back, neck and shoulders
- Sluggish circulation over a broad region
- Subacute recovery support over the trunk

- Areas unsuitable for immersion baths
- Clients who need continuous therapist control of the dose

Contraindications

- Acute injury, inflammation or bleeding
- Impaired sensation or circulatory disease
- Cold hypersensitivity or Raynaud's phenomenon
- Open or broken skin at the site
- Any presentation excluded by either the heat or the cold contraindication list

The contrast-towel sequence

1. **Prepare.** Ready hot and cold water and several towels for each; screen the client and obtain consent before positioning.
2. **Begin hot.** Apply a well-wrung hot towel for about three to four minutes, with a dry towel over it to hold the heat.
3. **Apply cold.** Swap to a wrung cold towel for about thirty to sixty seconds.
4. **Exchange smoothly.** Move briskly so the region never loses the contrast rhythm; have the next towel in hand before removing the current one.
5. **Cycle three to four times.** Maintain the approximate 3 : 1 hot-to-cold ratio throughout.
6. **End cold and dry.** Finish on cold, dry the skin, cover the area, reassess and proceed.

Protecting the skin and preventing chill

Heat side

- Test every hot towel on your own forearm before applying it — every towel, not just the first.
- Wring thoroughly: drips scald and then chill.
- Never carry a dripping towel across the client.
- Keep the hot water source out of the client's reach.
- Screen for both heat and cold contraindications before beginning.

Cold side and general

- Wring cold towels equally well; a sodden cold towel over-cools and soaks the linens.
- Keep adjacent areas covered to prevent the client chilling between phases.
- Work in a warm room; contrast work in a cool room leaves clients cold and uncomfortable.
- Dry the skin at the end and cover the region immediately.
- Use clean towels for each client and launder after use.

Choosing between the two contrast methods

Factor	Contrast baths	Contrast towels
Region	Hands, wrists, feet, ankles	Back, neck, shoulders, trunk, thighs
Coverage	Complete and even — full immersion	Surface only, but conforms to any contour
Temperature control	Precise; measured and maintained in the basin	Approximate; controlled by water temperature and wringing

Factor	Contrast baths	Contrast towels
Mechanical component	Hydrostatic pressure of the water	Light pressure of the towel only
Therapist workload	Low once set up	High — continuous exchange
Home translation	Excellent — two bowls	Possible but demanding for a client alone
Best where	The part fits in a basin and the client can move it	Immersion is impossible or the client cannot sit up

The consent discussion for contrast therapy

What you say

- **Nature —** 'Alternating hot and cold — about three to four minutes hot, then half a minute to a minute cold, three or four times, always ending on cold.'
- **Benefits —** 'It pumps circulation through the area, which can help with the residual stiffness and swelling.'
- **Risks —** 'The cold phases are uncomfortable at first. There is a small risk of a burn or a cold injury if the temperatures are wrong, so I measure both.'

What you say, continued

- **Alternatives —** 'We could use heat alone, or just work manually without the temperature component.'
- **Screening —** 'Before we start — have you ever reacted badly to cold, or had any circulation problems or clots?'
- **Stopping —** 'You can ask me to stop at any point, including between cycles. I'll check in each time we switch.'
- **Then —** obtain agreement and document the discussion within 24 hours.

Teaching contrast bathing at home

The instructions

- Two basins or bowls, one comfortably hot and one cold with a little ice.
- Same timing: about three to four minutes hot, thirty to sixty seconds cold.
- Three to four cycles, always beginning hot and finishing cold.
- Dry thoroughly afterwards, especially between fingers or toes.
- Once or twice a day during the subacute phase, then reassess.
- Give written instructions — the sequence is easy to get wrong from memory.

Stop criteria to give the client

- Numbness that persists after the cold phase
- Skin that goes blotchy white rather than pink
- Any increase in swelling or pain after the session
- Fingers or toes changing colour
- Feeling faint or unwell
- Advise clients with diabetes, neuropathy or vascular disease against unsupervised home contrast bathing

What to record for a contrast application

- Screening for both heat and cold contraindications, recorded separately — including the explicit cold-response question.

- Skin inspection and sensation test result at the site.
- Stage of the condition and the reasoning for choosing contrast over heat or cold alone.
- Method used: two-basin immersion or towels.
- Measured temperatures of both the hot and cold sources.
- Phase durations, ratio and number of cycles completed.
- Confirmation that the sequence began hot and ended cold.
- Skin observations at each transition, client response, home care given and the reassessment plan.

When the sequence is not working

During

- **The client finds the cold intolerable —** raise the cold basin slightly, shorten the cold phase to thirty seconds, and reassure. Do not abandon the cold phase — without it there is no contrast.
- **The hot basin cools quickly —** top up with hot water away from the limb and stir before the part returns.
- **The transitions are slow —** the pump depends on prompt alternation. Set up both sources within arm's reach before starting.
- **The client shivers —** the room is too cool or too much of the body is exposed. Cover them and warm the room.

After

- **Swelling has increased —** the presentation was more acute than judged. Re-stage, use cold alone, and record the finding.
- **The part feels heavy and congested —** the sequence may have finished on heat. Confirm you ended cold.
- **Persistent numbness —** the cold phase was too long or too cold. Stop, rewarm gradually, document, and reassess before repeating.
- **No change at all —** check the temperature differential was genuine; a lukewarm-to-cool contrast produces little pump effect.

Adjusting or excluding contrast therapy

Exclude for

- Any diagnosed abnormal cold response — cold urticaria, Raynaud's, cryoglobulinaemia
- Peripheral vascular disease and DVT
- Impaired or absent sensation at the site
- Acute injury or an inflammatory flare
- Diabetes with vascular or neuropathic involvement
- Any client excluded by either the heat or the cold list

Modify for

- Older adults: narrow the temperature differential and reduce to two or three cycles.
- Frail or deconditioned clients: use towels rather than immersion, and treat a smaller region.
- Pregnancy: local extremity contrast is generally acceptable; avoid abdominal and systemic work.
- Clients who find cold aversive: shorten the cold phase rather than warming it out of range.
- First application on any client: fewer cycles, closer monitoring, and record the response.

Common errors and their corrections

The error

- Using contrast on an acutely swollen ankle
- Ending on the hot phase
- Letting the cold phase run as long as the hot
- Screening for heat contraindications only
- Estimating the basin temperatures
- Taking thirty seconds to move between basins

The correction

- Contrast is a subacute modality; acute means cold alone
- Always finish cold — the tonifying effect depends on it
- The ratio is about 3 : 1; a 1 : 1 ratio over-cools the tissue
- Both lists apply; either one excluding the client excludes contrast
- Measure both with a thermometer and re-check during the sequence
- Prompt transitions are what create the pump; set up within reach

Case scenarios

Presentations

- A client has a two-week-old wrist sprain with residual stiffness and mild puffiness.
- A client with a three-day-old ankle sprain still has visible swelling and warmth.
- A client with subacute low back stiffness cannot sit up for towel work.
- A client reports that their fingers go white in the cold.
- A client asks whether they can do contrast bathing in the shower at home.

Reasoning targets

- Textbook subacute presentation: two-basin contrast for the hand and wrist, begin hot end cold.
- Still acute or early subacute with inflammatory signs. Cold alone; reassess in a few days.
- Position side-lying and use contrast towels, or defer the thermal component and treat manually.
- Raynaud's phenomenon: an absolute contraindication to any cold, including the cold phase of contrast.
- Yes, alternating shower temperatures is a workable home version — give the same ratio, cycles and stop criteria in writing.

Rehearse this sequence until it is automatic

1. **State your choice and rationale.** Contrast method, region, stage of the condition, and why contrast rather than heat or cold alone.
2. **Screen aloud, twice.** Once for heat contraindications, once for cold — including the explicit abnormal-cold-response question.
3. **Consent aloud.** All six elements, including a description of how the cold phases will feel.
4. **Verify both temperatures.** Thermometer readings for hot and cold, stated aloud, with both sources within reach.

5. **Run the sequence.** Begin hot, keep the ratio, transition promptly, check in at every switch, end cold.
6. **Finish and document.** Dry thoroughly, reassess, give written home care, and write the entry as you would in clinic.

Adjusting the protocol to the goal

Standard and gentler variants

- **Standard —** 3–4 min hot : 30–60 s cold, 3–4 cycles. The default and the one you will be assessed on.
- **Gentler —** narrow the differential, use 3 min warm : 30 s cool, and reduce to two or three cycles. Suits older adults, first applications and anxious clients.
- **Shorter cold —** keep the cold at 20–30 seconds where the client finds it aversive. Preferable to warming the cold basin out of its effective range.

Stronger variants and cautions

- **Wider differential —** increases the pump effect and the demand on the client. Only for healthy clients with a clear indication, and never on a first application.
- **More cycles —** beyond four cycles adds little and increases total exposure.
- **Systemic contrast —** alternating whole-body hot and cold is a systemic application with cardiovascular demand. Outside the scope of the local techniques taught here.
- **Record the variant used —** so the next therapist can reproduce or adjust it.

Contrast therapy and subacute swelling

Reducing residual swelling is the commonest reason to choose contrast. Understanding why it works also tells you when it will not.

- Subacute swelling is largely interstitial fluid that has already left the vasculature and has not yet been cleared.
- The alternating pressure gradients created by cycles of vasodilation and vasoconstriction assist that clearance.
- Immersion adds hydrostatic pressure, which supports the same movement — this is why baths outperform towels for a swollen hand or foot.
- Elevation between and after cycles improves the result substantially; a dependent limb undoes much of the effect.
- Contrast does nothing for swelling that is still being actively generated — that is an acute presentation and needs cold and relative rest.
- It also does nothing for oedema of cardiac, renal or hepatic origin, which is a referral rather than a treatment target.
- Unilateral limb swelling with pain, warmth and redness must be screened for DVT before any thermal work.
- Measure and record girth where swelling is the treatment target, so you can demonstrate change.

Where contrast fits in a treatment session

Sequencing

- Use contrast early in the session, then work manually on the region while it is responsive.
- Do not follow contrast with vigorous stretch: the cold finish has reduced tissue extensibility.
- If stretch is the goal, use heat alone instead and stretch while warm.
- Active movement after contrast is well tolerated and reinforces the fluid-clearing effect.

- Elevate the part for a few minutes after finishing if swelling is the target.

What to do during the cycles

- Stay present and manage the transitions; this is not unattended time.
- Use the hot phases to take history, complete the consent record and teach the home routine.
- Check in verbally at every switch — this is the reverification of consent the Standard requires.
- Watch the client's colour and demeanour, not only the treated part.
- Have the next source ready before ending the current phase.

How this lecture maps to the CMTO Standards

Requirement	Application to contrast therapy
Consent R1 — six elements	Explain the alternation, the discomfort of the cold phases, the risks of both burn and cold injury, and the alternatives
Consent R6 — monitor and reverify	Check in at every transition; a client may withdraw consent between cycles
Consent R7 — document within 24 hours	Record the consent discussion including the abnormal-cold-response screening question and the answer
Safety and Risk Management R1 and R2	Basins disinfected between clients; fresh water each time; wet floors managed as a slip hazard
Safety and Risk Management R8	Both heat and cold contraindication sets screened separately and recorded separately
Record Keeping	Both measured temperatures, phase durations, cycle count, the hot-start and cold-finish, and skin findings at each transition

Describing contrast therapy honestly

What you can say

- Alternating heat and cold produces measurable cyclical changes in superficial blood flow.
- Clients commonly report reduced stiffness and improved comfort in subacute presentations.
- It provides strong, varied sensory input that contributes to pain modulation.
- It is inexpensive, low-risk when correctly screened, and easy for clients to continue at home.

What you should not claim

- That it flushes lactic acid or removes toxins from the tissue.
- That it produces lasting structural change or accelerates healing beyond what movement and time achieve.
- That it reaches deep joint structures — the measurable effect is chiefly superficial.
- The evidence base for contrast therapy is modest and mixed. Say so, describe the mechanism honestly, and use the client's own response as your measure of effect.

What you need and how you look after it

- Two basins per client, deep enough to cover the part above the joint being treated.
- A thermometer, used at the start and again during the sequence as both basins drift toward room temperature.
- A jug of hot water and a supply of ice to maintain both temperatures across three to four cycles.
- Several towels for each temperature where using the towel method, plus dry covering towels.

- Waterproof surface protection, a non-slip mat and a means of managing splash and floor water.
- Disinfectant appropriate to the basin surface, with its safety data sheet held under WHMIS requirements.
- Disinfect both basins between every client and log it in the equipment service record.
- Never reuse water between clients, and never top up one client's basin from another's.

5. Summary — carry these into the clinic

- Contrast therapy is a vascular pump created by alternating heat and cold.
- Begin hot, end cold; approximately 3 : 1 ratio; three to four cycles.
- Immersion: hot basin 38–43 °C, cold basin 10–16 °C, both measured and maintained.
- Best for subacute presentations — never acute, and re-stage at every visit.
- Screen for both heat and cold contraindications; either one excludes the client.
- Two basins deliver even immersion contrast to hands and feet; towels bring the same effect to the trunk and back.
- Prompt transitions are what create the pump — set up everything within reach before starting.
- Easy to reproduce at home with two bowls; give the sequence and the stop criteria in writing.

6. Review questions

Cover the answers below and attempt each question from memory before checking. These map directly to the written examination.

1. Explain the vascular pump mechanism in your own words.
2. State the sequence, phase durations, ratio and number of cycles for standard contrast therapy.
3. Why do we begin hot and end cold?
4. State the hot and cold basin temperatures for a contrast foot bath.
5. Why does contrast therapy carry both the heat and the cold contraindications?
6. Why is contrast a subacute rather than an acute modality?
7. When would you choose contrast towels over contrast baths?
8. Name four stop criteria you would give a client for home contrast bathing.

7. Answers and discussion

1. Heat dilates and cold constricts; alternating them produces successive waves of dilation and constriction rather than a single sustained change, mobilising blood and interstitial fluid through the region. Switching back to heat during reactive vasodilation amplifies the flow response.
2. Begin hot and end cold; hot phase three to four minutes; cold phase thirty to sixty seconds; an approximate 3:1 ratio; three to four complete cycles, over roughly 15–20 minutes.
3. Beginning hot is more comfortable, allows acclimatisation and establishes vasodilation so that the cold phase produces a genuine contrast. Ending cold leaves reactive vasodilation building after the treatment, producing a tonifying finish and reducing the risk of post-treatment oedema in a dependent limb.
4. Hot basin approximately 38–43 °C (100–110 °F); cold basin approximately 10–16 °C (50–60 °F), both verified with a thermometer and maintained through the sequence.

5. Because both temperatures are applied. The client must be cleared separately against each list, and if either list excludes them, contrast is excluded. Alternating does not average the risk.
6. Because the hot phase would increase bleeding, exudate and pain in an acutely inflamed injury. In the subacute stage the pump mobilises residual fluid without provoking fresh inflammation.
7. When the region cannot be immersed — back, neck, shoulders, trunk — or when the client cannot sit up or move the part between basins. Towels also give the therapist continuous control where tolerance is uncertain.
8. Any four of: numbness persisting after the cold phase; skin going blotchy white rather than pink; any increase in swelling or pain after the session; fingers or toes changing colour; feeling faint or unwell. Advise clients with diabetes, neuropathy or vascular disease against unsupervised home contrast bathing.

8. References and further reading

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